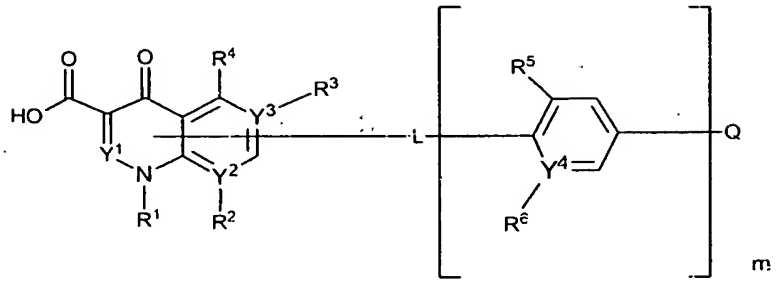
PATENT APPLICATION
28341/6304.NDV1
WHAT IS CLAIMED IS:

1. A compound having a structural formula:



(I)

or a pharmaceutically acceptable salt, hydrate, or prodrug thereof,

wherein Y^1 is CH or N;

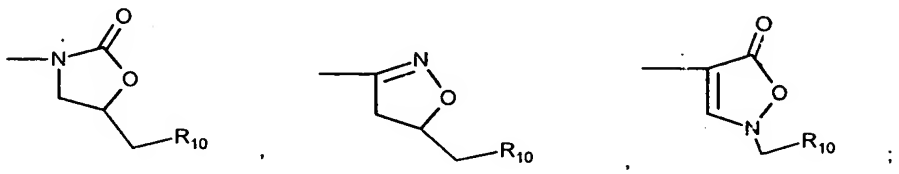
Y^2,Y^3, and Y^4, independently, are C or N;

L is a bond or is a linker group attached to a carbon at the seven quinolone ring position or to an N at the one quinolone ring position, and selected from the group consisting of a bond, NR^7, and $NR^8(CR^9_2)_nNR^8$;

m is 0 or 1;

n is 0-3;

Q is selected from the group consisting of



R^1 is selected from the group consisting of null, H, C_1-C_4alkyl, C_3-C_5cycloalkyl, C_1-C_4haloalkyl, and halophenyl;

R^2 is null when Y^2 is N, or is selected from the group consisting of H, alkyl, C_1-C_2alkoxy, halo, and haloalkoxy, when Y^2 is C, or when Y^2 is C, R^1 and R^2 can be

taken together to form a 5- or 6-membered, optionally substituted, heteroalkyl or heteroaryl ring;

R^3 is H or F when Y^3 is C, or R^3 is null when Y^3 is N;

R^4 is selected from the group consisting of H, methyl, amino, and F;

R^5 is selected from the group consisting of H, methyl, hydroxy, and halo;

R^6 is selected from the group consisting of H, methyl, hydroxy, and halo,when Y^4 is C, or R^6 is null when Y^4 is N;

R^7 is selected from the group consisting of H, C_1-C_4 alkyl, formyl, alkylcarbonyl, alkylsulfonyl, and alkoxycarbonyl;

R^8, independently, are H or C_1-C_4alkyl, or are taken together to form a 4- to 9-membered, optionally substituted, heteroalkyl or heteroaryl ring;

R^9, independently, are H or C_1-C_4alkyl, or are taken together to form a 4- to 9-membered heterocyclic or heterobicyclic ring, optionally substituted with C_1-C_2alkyl, haloalkyl, or methoximino;

R^{10} is selected from the group consisting of OH, alkoxy, aryloxy, and $NHC(=Z)R^{11}$;

R^{11} is selected from the group consisting of H, C_1-C_7alkyl, C_3-C_5cycloalkyl, hydroxymethyl, haloalkyl, CH_2SMe, $NR^{12}{}_2$, C_1-C_4alkoxy, and aryloxy;

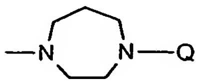
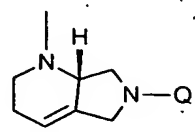
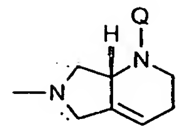
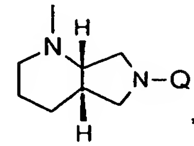
R^{12} is C_1-C_4alkyl; and

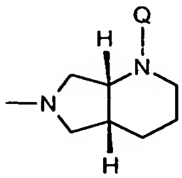
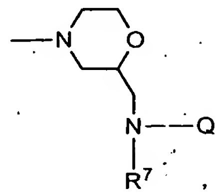
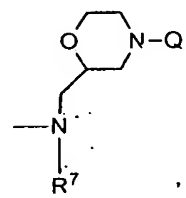
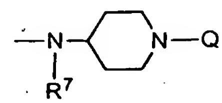
Z is O or S.

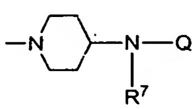
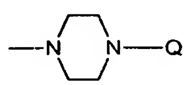
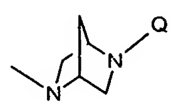
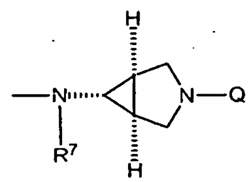
2. The compound of claim 1 wherein L is a bond.

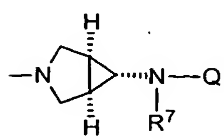
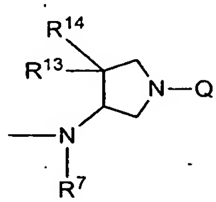
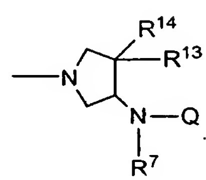
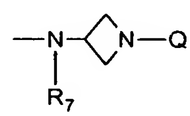
3. The compound of claim 1 wherein L is NR^7 or NR^8 $(CR^9{}_2)_n$ NR^8.

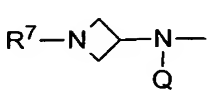
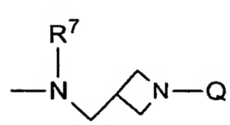
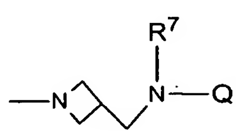
4. The compound of claim 1 wherein m is 0 and L-Q is selected from the group consisting of:

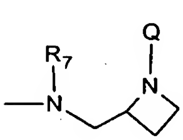
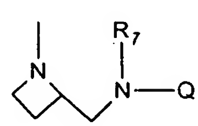
 ,  ,  ,  ,

 ,  ,  ,  ,

 ,  ,  ,  ,

 ,  ,  ,  ;

 ,  ,  ,

 , and 

wherein R^{13} and R^{14}, independently, are H, C_{1-2}alkyl, or C_{1-2} haloalkyl, or are taken together to form a cyclopropyl or methoximino group.

5. The compound of claim 1 wherein Q is an oxazolidinone group.

6. The compound of claim 1 wherein Q is an isoxazoline group.

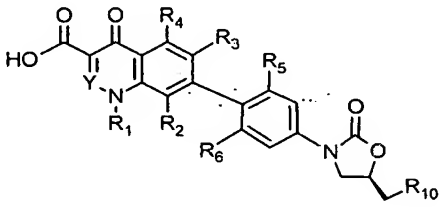
7. The compound of claim 1 wherein Q is an isoxazolinone group.

8. The compound of claim 1 wherein Y^2,Y^3, and Y^4 are C.

9. The compound of claim 1 wherein Y^2 is N, and Y^3 and Y^4 are C.

10. The compound of claim 1 wherein Y^2 and Y^3 are N, and Y^4 is C.

11. A compound having a structural formula:



or a pharmaceutically acceptable salt, hydrate, or prodrug thereof wherein;

Y is CH or N;

R^1 is selected from the group consisting of H, C_1-C_4alkyl, C_3-C_5cycloalkyl, C_1-C_4haloalkyl, and halophenyl;

R^2 is selected from the group consisting of H, alkyl, C_1-C_2alkoxy, halo, and haloalkoxy;

R^3 is H or F;

R^4 is selected from the group consisting of H, methyl, amino, and F;

R^5 is selected from the group consisting of H, methyl, hydroxy, and halo;

R^6 is selected from the group consisting of H, methyl, hydroxy, and halo;

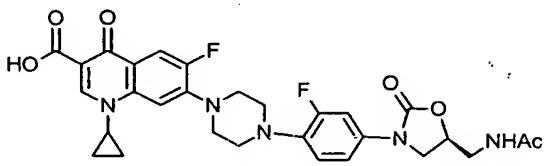
R^{10} is selected from the group consisting of OH, alkoxy, aryloxy, and $NHC(=Z)R^{11}$;

R^{11} is selected from the group consisting of H, C_1-C_7alkyl, C_3-C_5cycloalkyl, hydroxymethyl, haloalkyl, CH_2SMe, NR^{12}_2, C_1-C_4alkoxy, and aryloxy;

R^{12} is C_1-C_4alkyl; and

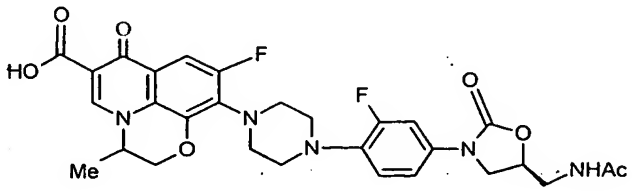
Z is O or S.

12. A compound having a structural formula:



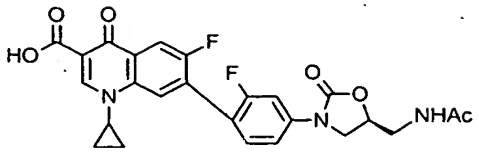
or a pharmaceutically acceptable salt, hydrate, or prodrug thereof.

13. A compound having a structural formula:



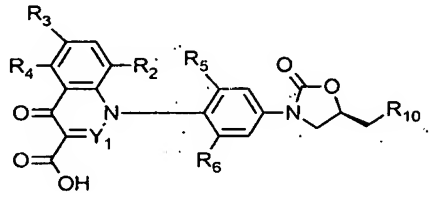
or a pharmaceutically acceptable salt, hydrate, or prodrug thereof.

14. A compound having a structural formula:



or a pharmaceutically acceptable salt, hydrate, or prodrug thereof.

15. A compound having a structural formula:



or a pharmaceutically acceptable salt, hydrate, or prodrug thereof wherein;

Y^1 is CH or N;

R^1 is selected from the group consisting of H, C_1-C_4alkyl, C_3-C_5cycloalkyl, C_1-C_4haloalkyl, and halophenyl;

R^2 is selected from the group consisting of H, alkyl, C_1-C_2alkoxy, halo, and haloalkoxy;

R^3 is H or F;

R^4 is selected from the group consisting of H, methyl, amino, and F;

R^5 is selected from the group consisting of H, methyl, hydroxy, and halo;

R^6 is selected from the group consisting of H, methyl, hydroxy, and halo;

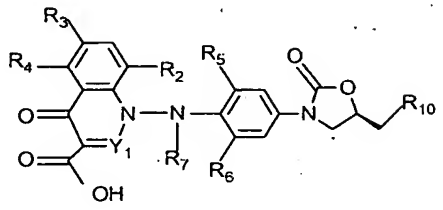
R^{10} is selected from the group consisting of OH, alkoxy, aryloxy, and $NHC(=Z)R^{11}$;

R^{11} is selected from the group consisting of H, C_1-C_7alkyl, C_3-C_5cycloalkyl, hydroxymethyl, haloalkyl, CH_2SMe, NR^{12}_2, C_1-C_4alkoxy, and aryloxy;

R^{12} is C_1-C_4alkyl; and

Z is O or S.

16. A compound having a structural formula:



or a pharmaceutically acceptable salt, hydrate, or prodrug thereof wherein;

Y^1 is CH or N;

R^2 is selected from the group consisting of H, alkyl, C_1-C_2alkoxy, halo, and haloalkoxy;

R^3 is H or F;

R^4 is selected from the group consisting of H, methyl, amino, and F;

R^5 is selected from the group consisting of H, methyl, hydroxy, and halo;

R^6 is selected from the group consisting of H, methyl, hydroxy, and halo;

R^7 is selected from the group consisting of H, C_1-C_4 alkyl, formyl, alkylcarbonyl,alkylsulfonyl, and alkoxycarbonyl;

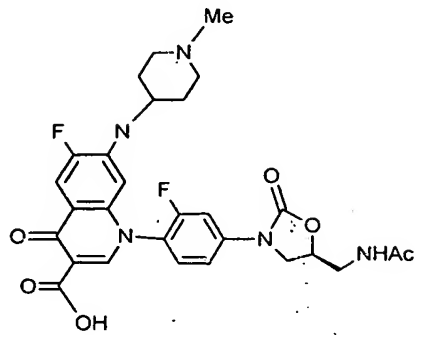
R^{10} is selected from the group consisting of OH, alkoxy, aryloxy, and $NHC(=Z)R^{11}$;

R^{11} is selected from the group consisting of H, C_1-C_7alkyl, C_3-C_5cycloalkyl, hydroxymethyl, haloalkyl, CH_2SMe, NR^{12}_2, C_1-C_4alkoxy, and aryloxy;

R^{12} is C_1-C_4alkyl; and

Z is O or S.

17. A compound having a structural formula:



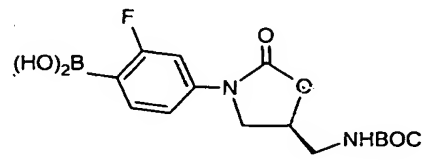
or a pharmaceutically acceptable salt, hydrate, or prodrug thereof.

18. The compound of claim 1 wherein the compound is an optically pure enantiomer having the S-configuration at C^5 of the oxazolidinone or isoxazoline ring.

19. The compound of claim 12 wherein the compound is an optically pure enantiomer having the S-configuration at C^5 of the oxazolidinone ring.

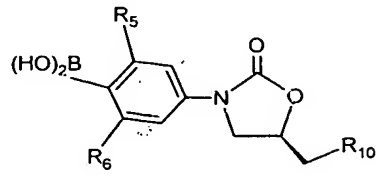
20. A compound selected from the group consisting of 2-methylpropyl (4-bromo-3-fluorophenyl)carbamate, (5*R*)-3-(4-bromo--3-fluorophenyl)-5-(hydroxymethyl)-1,3-oxazolidin-2-one, [(5*R*)-3-(4-bromo-3-fluorophenyl)-2-oxo-1,3-oxazolidin-5-yl]methyl 3-nitrobenzene sulfonate, and *tert*-butyl [(5*S*)-3-(4-bromo-3-fluorophenyl)-2-oxo-1,3-oxazolidin-5-yl] methylcarbamate.

21. A compound having a general structural formula:

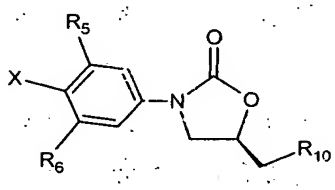


or a salt or hydrate thereof.

22. A method of preparing a boronic acid having a general structural formula:



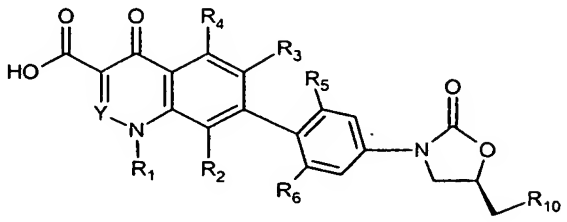
wherein R^5 and R^6 are independently selected from the group consisting of H, methyl, hydroxy, and halo; R^{10} is selected from the group consisting of OH, alkoxy, aryloxy, and $NHC(=Z)R^{11}$; R^{11} is selected from the group consisting of H, C_1-C_7alkyl, C_3-C_5cycloalkyl, hydroxymethyl, haloalkyl, CH_2SMe, NR^{12}_2, C_1-C_4alkoxy, and aryloxy; R^{12} is C_1-C_4alkyl; and Z is O or S., or a salt or hydrate thereof, comprising contacting an haloaryloxazolidinone having a general structural formula:



wherein X is halogen, with an alkaline base whose conjugate acid has a pKa of greater than about 10 and an alkylborate.

23. The method of claim 22 wherein the alkylborate is trimethylborate .

24. A method of preparing compound having a general structural formula:



wherein

Y is CH or N;

R^1 is selected from the group consisting of H, C_1-C_4alkyl, C_3-C_5cycloalkyl, C_1-C_4haloalkyl, and halophenyl;

R^2 is selected from the group consisting of H, alkyl, C_1-C_2alkoxy, halo, and haloalkoxy;

R^3 is H or F;

R^4 is selected from the group consisting of H, methyl, amino, and F;

R^5 is selected from the group consisting of H, methyl, hydroxy, and halo;

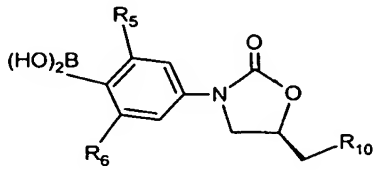
R^6 is selected from the group consisting of H, methyl, hydroxy, and halo;

R^{10} is selected from the group consisting of OH, alkoxy, aryloxy, and $NHC(=Z)R^{11}$;

R^{11} is selected from the group consisting of H, C_1-C_7alkyl, C_3-C_5cycloalkyl, hydroxymethyl, haloalkyl, CH_2SMe, NR^{12}_2, C_1-C_4alkoxy, and aryloxy;

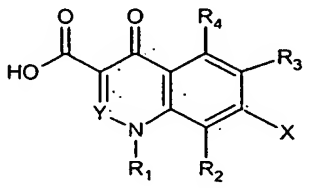
R^{12} is C_1-C_4alkyl; and

Z is O or S, or a salt or hydrate thereof, comprising contacting a boronic acid having a general structural formula:



or a salt or hydrate thereof, with

a quinolone having a general structural formula:



wherein X is halogen, haloalkylsulfonyl, alkylsulfonyl, haloarylsulfonyl, or arylsulfonyl, or a salt or hydrate thereof; in the presence of a palladium catalyst.

25. The method of claim 24 wherein the palladium catalyst is dichlorobis(triphenylphosphine)palladium(II) .

26. A pharmaceutical composition comprising a compound of claim 1 in admixture with a pharmaceutically acceptable adjuvant, diluent, or carrier.

27. A method of treating a microbial infection in a warm blooded animal comprising administering a therapeutically effective amount of a compound of claim 1 to the animal.

28. The method of claim 27 wherein the animal is a human.

29. A method of treating a microbial infection in a warm blooded animal comprising administering a therapeutically effective amount of a composition comprising a compound of claim 1 in admixture with a pharmaceutically acceptable adjuvant, diluent, or carrier, to the animal.

30. The method of claim 29 wherein the animal is a human.